REMARKS

The Examiner has rejected claims 1-7, 10, 15-17, 26-30, 33, 37-39 under 35 U.S.C. 102(e) as being anticipated by Chao U. S. 6,215,776.

The Examiner states regarding claims 1, 6, 7, 15-17, 29-30, 37-39, the claimed satellite communication system comprised of a plurality of satellites and a plurality of gateways is anticipated by system (Figure 1, element 10) with plurality of satellites (elements 12, 14, and 16) and plurality of gateways (elements 20, 24, and 32). The Examiner states the claimed terrestrial communications system is disclosed by network (element 26) and the claimed plurality of nodes including source nodes, destination nodes and intermediate nodes is disclosed by terminals (elements 22, 28, 30, 36), satellites and gateways. The Examiner contends the claimed multiple copies are selectively generated within network based on criteria is disclosed by system parameters including availability of satellites to link the source and destination gateways which takes into account a direction of transmission – uplink and downlink. Further, the Examiner contends the claimed multiple copies of a packet coexist within the network and are routed, using at least in part satellite-resident routers and gateway-resident routers, over a plurality of different paths between a particular source and destination node is disclosed by source terminal (Figure 1, element 30) transmitting multiple copies of the same packet (Figure 5, element 70) using gateways and satellites over different paths (Figure 1, elements 42, 44, 46, 48). The Examiner concludes the claimed duplicate copy of packet not used during the execution of packet reordering in the destination node or intermediate node is disclosed by destination gateway (Figure 1, element 34) recognizing packets as repeated packets by examination of payload information which includes sequence numbers, directing Applicants' attention to Figure 4 and to column 5, lines 66-67 and column 6, lines 1-15.

Applicants respectfully submit that in Chao '776 there is disclosed a multimedia communication system having a plurality of mobile, fixed location, and portable terrestrial communication terminals. The system links terrestrial communication terminals together through a network of non-geostationary satellites. The satellites communicate with a communication protocol similar to terrestrial communication protocols to reduce protocol conversion. The source and destination addressing uses static terrestrial cells for the uplink and the downlink. The terminal data stream is segmented into communication packets at the terrestrial gateway based on the uplink satellite's determination of system parameters. A control satellite dynamically balances up-links and down-links in the terrestrial areas with over-lapping satellite coverage.

Applicants respectfully submit that in column 5, lines 66-67 and column 6, lines 1-15 there is stated "To enhance communication reliability on links with lower quality of service ("QoS"), a source terminal 30 (Fig. 1) can transmit multiple copies of the same packet 70.

"The payload information of the packet 70 includes identical session identification 98 and sequence numbers. Thus, the destination gateway 34 (Fig. 1) recognize the packets 70 as repeated packets. The gateway 34 then compares the payload of the repeated packets. The repeated payloads are compared bit by bit. That is, the first bit of the payload of each packet is compared, then the next bit is compared until each bit has been compared. The value of each original transmitted bit is determined by a simple majority. Since a simple majority is required to determine the value of the original transmitted data, it is desirable to transmit an odd number of repeat packets. In a preferred embodiment of the present invention three copies of the terminal data are sent when repetition is desired."

Applicants respectfully submit that no where in any of Fig. 1, element 10, elements 12, 14 and 16, elements 20, 24, 32, element 26, elements 22, 28, 30, 36, Fig. 1, element 30, Fig. 5, element 70, Fig. 1, elements 42, 44, 46, 48, Fig. 1, element 34, Fig. 4 or at column 5, lines 66-67 and column 6, lines 1-15 of Chao '776 is there any teaching, suggestion or implication that multiple copies of a packet are selectively generated within the data communications network based on a criteria that includes at least one of (a) whether the packet was previously duplicated by a previous node and (b) a direction of transmission, from source to destination or from destination to source, and wherein at least one duplicate copy of a given packet is not used during the execution of a packet reordering procedure in the destination node or at an intermediate node as required by claim 1 of the instant invention and the other claims at issue. On the contrary, Applicants respectfully submit that at column 5, lines 66 through column 6, line 15 there is merely disclosed a destination gateway 34 which recognizes the packets 70 as repeated packets then compares the payload of the repeated packets bit by bit, determining a value of each originally transmitted bit by a simple majority which is required to determine the value of the original transmitted data, concluding it is desirable to transmit an odd number of repeat packets. It is further stated, in a preferred embodiment of Chao '776 three copies of the terminal data are sent when repetition is desired. Applicants respectfully conclude that claim 1 and the other claims at issue are patentably distinguishable over this teaching for the following reasons: inter alia the conspicuous absence of the requirement that multiple copies of the packet are selectively generated within the data communications network based on a criteria that includes at least one of (a) whether the packet was previously duplicated by a previous node, and (b) a direction of transmission, from source to destination or from destination to source; and wherein at least one duplicate copy of a given packet is not used during the execution of a packet reordering procedure in the destination node or at an intermediate node.

The Examiner goes on to state regarding claims 2, 26, the claimed satellite-to-satellite cross-links are anticipated by paths as shown in Figure 1, element 48.

Although Applicants do not necessarily agree that the satellite-to-satellite cross-links as set out in claims 2 and 26 are shown as contended by the Examiner in Figure 1, element 48, nevertheless this rejection fails for the reasons recited above inter alia the conspicuous absence of employing criteria (a) and (b) as recited and the requirement that one duplicate copy of the given packet is not used during execution as required in claims 2 and 26.

The Examiner goes on to state regarding claims 3, 26, the claimed satellite-to-gateway uplinks and downlinks are anticipated by paths as shown in Figure 1, elements 42, 44 and 46.

Although Applicants do not necessarily agree that the satellite-to-gateway uplinks and downlinks are anticipated by those pointed out by the Examiner in Figure 1, elements 42, 44 and 46, nevertheless claims 3 and 26 are patentably distinguishable over Figure 1, elements 42, 44 and 46 and the remainder of the Chao disclosure for the reasons recited above inter alia relating to the conspicuous absence of the criteria that includes (a) and (b) and the limitation with regard to at least one duplicate copy of a given packet is not used during the execution of the packet reordering procedure as described in the instant claims.

The Examiner goes on to state regarding claims 4, 27, the claimed satellite-to-user terminal uplink and downlink is anticipated by paths as shown in Figure 1, elements 42 and 46.

Although Applicants do not necessarily agree that the satellite-to-user terminal uplink and downlink is disclosed as contended by the Examiner in Figure 1, elements 42 and 46, claims 4 and 27 nevertheless are patentably distinguishable over Chao '776 for the reasons recited above inter alia relating to the conspicuous absence of the criteria that includes (a) and (b) and the limitation with regard to at least one duplicate copy of a given packet is not used during the execution of the packet reordering procedure as described in the instant claims.

The Examiner goes on to state regarding claims 5, 10, 28, 33, the claimed TCP/IP or equivalent packets are disclosed by communication between terminals following Ipv4 or Ipv6 and containing payload with sequence numbers and session information as disclosed in column 3, lines 34-38, column 5, lines 66-67 and column 6, lines 1-15.

Applicants respectfully submit that in column 3, lines 34-38 there is disclosed "Typically, communication between terminals 28 and 30 follows a structured communication protocol, such as the Internet Protocol version 4 ("IPv4"), Internet Protocol Next Generation ("IPv6"), or asynchronous transfer mode ("ATM"). A gateway 24 translates the terminal protocol to the satellite communication protocol before transmitting the communication to the satellite 12." Column 5, line 66 through column 6, line 15, previously discussed as teaching recognizing repeated packets, comparing them bit by bit and the desirability of transmitting an odd number of repeat packets, coupled with the previous

recitation at column 3, lines 34-38, does not disclose the TCP/IP packets set out in claims 5, 10, 28 and 33 and further said claims are patentably distinguishable over these recitations in columns 3 and 5 made by the Examiner and the remainder of Chao for the reasons recited above inter alia relating to the conspicuous absence of the criteria that includes (a) and (b) and the limitation with regard to at least one duplicate copy of a given packet is not used during the execution of the packet reordering procedure as described in the instant claims.

The Examiner has rejected claims 8-9, 31-32 under 35 U.S.C. 103(a) as being unpatentable over Chao. The Examiner contends that Chao discloses all the limitations of the claims except for the claimed constellation of low earth orbit and medium earth orbit satellites. The Examiner continues that at the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the system of Chao with low earth orbit and medium earth orbit satellites. Further, the Examiner contends that one of ordinary skill in the art would be motivated to do this since they are more recently developed satellites that are not synchronized with the earth's rotation and vary widely in terms of orbital paths and altitudes.

Applicants respectfully contend that no where in Chao is it disclosed, suggested or implied that low earth orbit or medium earth orbit satellites may be employed in the context of the Chao system and accordingly Applicants respectfully disagree that at the time the invention was made it would have been obvious to a person of ordinary skill in the art to so modify Chao. Further, Applicants respectfully contend that claims 8-9 and 31-32 are patentably distinguishable over Chao under 35 U.S.C. 103(a) for the reasons recited above inter alia relating to the conspicuous absence of the criteria that includes (a) and (b) and the limitation with regard to at least one duplicate copy of a given packet is not used during the execution of the packet reordering procedure as described in the instant claims.

The Examiner has rejected Claims 11-14, 34-36 under 35 U.S.C. 103(a) as being obvious over Chao in view of Wiedeman et al U. S. 6,134,423. The Examiner presents a discussion with regard to the Wiedeman et al '423 reference as constituting prior art under 35 U.S.C. 102(e) and sets out suggestions to overcome the rejection under 35 U.S.C. 103(a).

The Examiner states regarding claims 11, 12, 34-35 Chao discloses all the limitations of the claims except for the claimed packets comprising voice data and routing of voice data over semi-permanent paths. The Examiner goes on to state that Wiedeman et al discloses packetized voice signals communicating via uplinks and downlinks through return and forward satellite transponders, directing Applicants' attention to Figure 3A. The Examiner concludes that at the time it would have been obvious to a person of ordinary skill in the art to modify the system of Chao to have packets comprising voice data and routing

over semi-permanent paths. The Examiner further concludes one of ordinary skill in the art would be motivated to do this for proper routing of voice communications through the appropriate satellites.

Applicants respectfully submit that in Wiedeman et al '423 there is a disclosed "A method and system wherein a system gateway (18) determines, from closed loop power control information, a power density at an antenna (13a) of a user terminal 13. The gateway also maintains a record of a duration of time that the power density exceeds a specified threshold. The gateway determines if an averaged transmitted power density associated with the antenna of the user terminal will equal or exceed at least one of a predetermined threshold level, within a specified period of time, or an absolute threshold level. If the gateway determines that a threshold will probably be exceeded if the call connection is maintained, the gateway terminates the connection prior to a time that the user terminal averaged transmitted power density level equals or exceeds the predetermined or absolute threshold level. A tone or a visual indicator may be employed to warn the user that a current connection or call will be terminated. Provisions are made for allowing predetermined types of calls (e.g., emergency calls) to be made during a cutoff period wherein the user terminal is prohibited from placing further calls. It is within the scope of the invention to perform the power density monitoring function also within the user terminal. In this case information may be transferred to the GW over a return link, and majority voting or some other technique can be employed by the GW before terminating the connection. In this case the power density determination made at the GW has priority over that made in the user terminal to prevent a user terminal from intentionally or inadvertently defeating the power density monitoring function."

Although Applicants do not agree that Wiedeman et al '423 at Figure 3A as contended by the Examiner teaches voice data and routing over semi-permanent paths as required by claims 11, 12, 34-35, and Applicants respectfully contend that claims 11, 12, 34-35 are patentably distinguishable over Chao for the reasons cited above inter alia relating to the conspicuous absence of the criteria that includes (a) and (b) and the limitation with regard to at least one duplicate copy of a given packet is not used during the execution of the packet reordering procedure as described in the instant claims and that Wiedeman et al does little to cure the deficiencies of this rejection. Furthermore, Applicants respectfully contend that notwithstanding one common inventor, Wiedeman, in the '423 reference and the instant claims, the inventive entities are different and there is no suggestion or implication in Chao that it may be properly combinable with Wiedeman et al '423 to properly reject the claims as contended by the Examiner.

Applicants further respectfully state for the record that the subject matter of the reference and the claimed invention, although distinguishable one from the other as recited

above, at the time the instant invention was made were owned by the same person or subject to an obligation of assignment to the person as provided for in MPEP 706.02(l)(1) and 706.02(l)(2).

The Examiner goes on to state regarding claims 13-14 Chao discloses all the limitations of the claims except for vocoded voice data that is generated external to a user terminal and that is input to the user terminal for transmission and vocoded voice data that is generated internal to a user terminal for transmission. The Examiner goes on to say that Wiedeman et al discloses a CDMA sub-system, referring Applicants to Figure 5, element 52, including a vocoder (element 53k) that is external to the terminal and Wiedeman et al discloses a user terminal, referring Applicants to Figure 6, element 13, in a satellite communication system, referring Applicants to Figure 1, element 10, comprising a vocoder (element 13c) for digitizing a user's speech, further directing Applicants' attention to column 10, lines 49-57. The Examiner contends that at the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the system of Chao to transmit vocoded voice data generated external and internal to a user terminal. The Examiner concludes that one of ordinary skill in the art would be motivated to do this for digitizing speech from a mobile that is external to the system or for efficiently digitizing voice within the same device.

Applicants respectfully disagree that Wiedeman et al '423 teaches that the voice data comprises vocoded voice data that is generated external to a user terminal and that is input to the user terminal for transmission to at least one satellite as required in claims 13 and 14 and further respectfully disagree that Wiedeman et al '423 provides a basis for a person of ordinary skill in the art to modify the system of Chao to transmit vocoded voice data general external and internal to a user terminal as described in the instant claims. Accordingly, Applicants respectfully disagree that one of ordinary skill in the art would be motivated to do this for digitizing speech from a mobile that is external to the system or for effectively digitizing voice within the same device as required in the claims of the instant invention. Applicants again respectfully submit that no where in Wiedeman et al '423 in Figure 5, element 52, vocoder element 53k (G?), Figure 6, element 13, Figure 1, element 10, vocoder element 13c or the recitation at column 10, lines 49-57 is there a basis for curing the deficiencies of the Chao reference or rendering claims 13-14 obvious under 35 U.S.C. 103(a) as contended by the Examiner.

Regarding claim 36, the Examiner goes on to state that Chao and Wiedeman et al, in combination, disclose all the limitations of the claims except for packets comprising encrypted voice data.

The Examiner therefore takes official notice of the concept and advantage of packets comprising encrypted voice data. According to the Examiner, at the time the

invention was made it would have been obvious to a person of ordinary skill in the art to have packets comprising encrypted voice data and one of ordinary skill in the art would be motivated to do this for security purposes.

Applicants respectfully disagree with the Examiner that there is any basis in either of Chao or Wiedeman et al to support the contention that it would have been obvious to a person of ordinary skill in the art to have packets comprising encrypted voice data or that one of ordinary skill in the art would be motivated to do this for security purposes as contended by the Examiner. Applicants respectfully submit, as the Examiner admits, that packets comprising encrypted voice data are conspicuously absent in both of Chao and Wiedeman et al. Applicants respectfully contend that claim 36 is distinguishable over Chao or Wiedeman et al in any combination for the reasons more fully recited above inter alia the improper combination of Chao and Wiedeman et al; the failure of Wiedeman et al to remedy the obvious deficiencies of Chao; and the obvious deficiencies of Chao as set out above inter alia relating to the conspicuous absence of the criteria that includes (a) and (b) and the limitation with regard to at least one duplicate copy of a given packet is not used during the execution of the packet reordering procedure as described in the instant claims.

RESPONSE TO ARGUMENTS

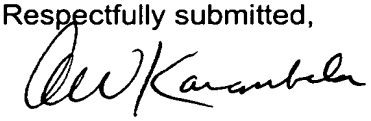
Applicants note that Applicants' arguments filed October 9, 2003 have been fully considered but they are not persuasive according to the Examiner. In summary, the Examiner states that Applicants amended independent claims 1, 17 and 39 with allowable subject matter of claim 20, as indicated in the previous office action, as well as with subject matter of claim 24. However, the Examiner states that claim 24 was rejected in the previous office action and the inclusion of subject matter of claim 24 does not place claims 1, 17 and 39 in condition for allowance. Due to claim language "at least one of", claims 1, 17 and 39 can be rejected by Chao which discloses system parameters including evaluating whether satellites are available to link source and destination gateways which teaches the subject matter of claim 24 regarding criteria involving direction of transmission, from source to destination or from destination to source.

Applicants have, as the Examiner suggested, rewritten dependent claim 20 in independent form to render said claim allowable, now claim 42. However, Applicants respectfully contend that the remaining claims, including claims 1, 17 and 39 as well as 24, have been shown to be patentably distinguishable over the prior art of record Chao and Wiedeman et al '423 in any combination for the reasons cited above relating to the deficiencies set out above with regard to Chao, the non-combinability of Chao with Wiedeman et al, and the failure of Wiedeman et al to remedy the obvious deficiencies of the Chao reference more fully explained above.

Applicants respectfully submit that in view of the above remarks and amendments, all of the claims presently under prosecution have been shown to contain patentable subject matter and to be patentably distinguishable over the prior art of record, Chao alone or further considered with Wiedeman et al in any combination.

Applicants respectfully request that this application be reviewed and reconsidered in view of the above remarks and amendments and that a Notice of Allowance be issued at an early date.

Respectfully submitted,



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